TAHIR MEHMOOD
M.Sc. Math
0345-6510779

Chapter: 13 MCQ's (29)

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1) Only _____ functions have inverses.
a- Into b- Onto ✓c- One-to-One d- None.

2) Domain of $y=\sin^{-1}x$ is _____ a- $-1\geq x\geq 1$ ✓b- $-1\leq x\leq 1$ c- $x\geq 1$ d- $x\leq -1$

3) Range of $y=\sin^{-1}x$ is _____ ✓a- $[-\pi/2, \pi/2]$ b- $[0,\infty)$ c- $(-\infty, 0]$ d- $\mathbb{R}$

4) $\sin^{-1}(\sqrt{3}/2)=$ _____ a- π b- $\pi/2$ ✓c- $\pi/3$ d- $\pi/6$

5) Domain of $y=\cos^{-1}x$ is _____ a- $[0,1]$ b- $[-1,0]$ ✓c- $[-1,1]$ d- $(-1,1)^c$

6) Range of $y=\cos^{-1}x$ is _____ a- $\mathbb{R}$ b- $(0,\pi)$ ✓c- $[0,\pi]$ d- $[-\pi/2, \pi/2]$

7) $\cos^{-1}(-1)=$ _____ ✓a- π b- $\pi/2$ c- 0 d- $-\pi/2$

8) Domain of $y=\tan^{-1}x$ is _____ a- $(-\pi/2, \pi/2)$ b- $[-\pi/2, \pi/2]$ ✓c- $\mathbb{R}$ d- None

9) Range of $y=\tan^{-1}x$ is _____ a- $\mathbb{R}$ ✓b- $(-\pi/2, \pi/2)$ c- $[-\pi/2, \pi/2]$ d- None

10) $\cos[\sin^{-1}(1/\sqrt{2})]=$ _____ a- 1 b- $1/2$ c- $\sqrt{3}/2$ ✓d- $1/\sqrt{2}$

11) $\sin^{-1}x=$ _____ a- $\frac{\pi}{2}-\cos x$ ✓b- $\pi/2-\cos^{-1}x$ c- $\pi-\cos^{-1}x$ d- None

12) $\frac{\pi}{2}-\sin^{-1}x=$ _____ a- $\cos x$ ✓b- $\cos^{-1}x$ c- $\cos^{-1}(\pi-x)$ d- None.

13) $\pi/2-\tan^{-1}x=$ _____ a- $\cos^{-1}x$ ✓b- $\cot^{-1}x$ c- $\cot x$ d- $\sin^{-1}x$

14) _____ $=\frac{\pi}{2}-\cot^{-1}x$ a- $\tan x$ ✓b- $\tan^{-1}x$ c- $\tan^{-1}(-x)$ d- None.

15) $\operatorname{Cosec}^{-1}x=$ _____ a- $\frac{\pi}{2}-\sec^{-1}x$ b- $\frac{\pi}{2}-\operatorname{Cosec}^{-1}x$ c- $\pi/2-\cot^{-1}x$ d- None

16) $\frac{\pi}{2}-\sec^{-1}x=$ _____ a- ✓$\operatorname{Cosec}^{-1}x$ b- $\sec^{-1}x$ c- $\cos^{-1}x$ d- None

17) $\sin^{-1}x+\cos^{-1}x=$ _____ a- π ✓b- $\pi/2$ c- 2π d- $3\pi/2$

18) $\tan^{-1}x+\cot^{-1}x=$ _____ a- ✓$\pi/2$ b- π c- 2π d- $3\pi/2$

19) $2\tan^{-1}x=$ _____ a- $\tan^{-1}\left(\frac{2x}{1+x}\right)$ ✓b- $\tan^{-1}\left(\frac{2x}{1-x^2}\right)$ c- $\tan^{-1}\left(\frac{2x}{1-x}\right)$ d- None

20) $\tan[\tan^{-1}x]=$ _____ a- ✓x b- $1/x$ c- $\frac{x}{\sqrt{1-x^2}}$ d- $2x\sqrt{1-x^2}$

21) $\sin^{-1}\left(A\sqrt{1-B^2}+B\sqrt{1-A^2}\right)=$ _____.
a- $\cos^{-1}A+\cos^{-1}B$ ✓b- $\sin^{-1}A+\sin^{-1}B$ c- $\sin^{-1}A-\sin^{-1}B$ d- $\cos^{-1}A-\cos^{-1}B$.

22) $\sin^{-1}A-\sin^{-1}B=$ _____.
a- $\sin^{-1}\left(AB-\sqrt{(1-A^2)(1-B^2)}\right)$ b- $\sin^{-1}\left(A\sqrt{1-A^2}-B\sqrt{1-B^2}\right)$ ✓c- $\sin^{-1}\left(A\sqrt{1-B^2}-B\sqrt{1-A^2}\right)$ d- None

23) $\tan^{-1}A+\tan^{-1}B=$ _____ a- $\tan^{-1}\left(\frac{A-B}{1+AB}\right)$ ✓b- $\tan^{-1}\left(\frac{A+B}{1-AB}\right)$ c- $\tan^{-1}\left(\frac{2A}{1-A^2}\right)$ d- None

24) $\tan^{-1}A-\tan^{-1}B=$ _____ a- $\tan^{-1}\left(\frac{A-B}{1-AB}\right)$ ✓b- $\tan^{-1}\left(\frac{A-B}{1+AB}\right)$ c- $\tan^{-1}\left(\frac{A+B}{1-AB}\right)$ d- None.

25) $\cos^{-1}x-\cos^{-1}y=$ _____.
a- $\cos^{-1}\left(xy-\sqrt{(1-x^2)(1-y^2)}\right)$ ✓b- $\cos^{-1}\left(xy+\sqrt{(1-x^2)(1-y^2)}\right)$ c- $\cos^{-1}\left[x\sqrt{1-y^2}+y\sqrt{1-x^2}\right]$ d- None.

26) $\cos^{-1}A+\cos^{-1}B=$ _____.
✓a- $\cos^{-1}\left[AB-\sqrt{(1-A^2)(1-B^2)}\right]$ b- $\cos^{-1}\left[AB+\sqrt{(1-A^2)(1-B^2)}\right]$ c- $\cos^{-1}\left[A\sqrt{1-A^2}-B\sqrt{1-B^2}\right]$ d None.

27) $\cos^{-1}(-x)=$ _____ a- $\sin^{-1}x$ b- $-\cos^{-1}x$ c- $\frac{\pi}{2}-\cos^{-1}x$ ✓d- $\pi-\cos^{-1}x$

28) $\cos[\sin^{-1}x] =$ ____ a- x b- $2x$ ✓c- $\sqrt{1-x^2}$ d- $\sqrt{1+x^2}$

29) $\sin^{-1}(-x) =$ ____ a- $\sin^{-1}x$ b- $\cos^{-1}x$ c- $-\cos^{-1}x$ ✓d- $-\sin^{-1}x$

30) $\tan^{-1}(-x) =$ ____ ✓a- $-\tan^{-1}x$ b- $\tan^{-1}x$ c- $\cot^{-1}x$ d- $-\cot^{-1}x$

CHAPTER: 14

1) Equation with atleast one trigometric variable is called ____ Equations.
a- Exponential b- Radical c- Logrithemic ✓d Trigonometric

2) A trigonometric Equation has ____ solutions:
a- One b- Two c- Three ✓d- Infinite

3) If $\sin x = \frac{1}{2}$ then $x =$ ____ where $x \in [0, 2\pi]$.
a- $\frac{\pi}{4}, \frac{3\pi}{4}$ b- $\frac{\pi}{3}, \frac{5\pi}{3}$ ✓c- $\frac{\pi}{6}, \frac{5\pi}{6}$ d- $\frac{\pi}{6}, -\frac{\pi}{6}$

4) Solution set of $1+\cos x = 0$ is ____ for $n \in Z$
a- $\{n\pi\}$ b- $\{(2n+1)\pi/2\}$ ✓c- $\{(2n+1)\pi\}$ d- $\{\frac{n\pi}{2}\}$.

5) Solution set of $\cos x = 2$ is ____.
a- $\{n\pi\}$ ✓b- ϕ c- $\{(2n+1)\pi/2\}$ d- $\{(2n+1)\pi\}$.

6) Solution Set of $2\cos x + \sqrt{3} = 0$ is ____.
a- ϕ b- Finite ✓c- Infinite d- None

7) If $\tan\theta = \frac{1}{\sqrt{3}}$ then θ lying in 3rd Quadrent is ____.
a- $\frac{7\pi}{3}$ ✓b- $\frac{7\pi}{6}$ c- $\frac{5\pi}{6}$ d- $\frac{5\pi}{3}$

8) Solution of $\tan 2\theta = 1$ in $[0, \pi]$ is ____.
a- $\pi/4$ ✓b- $\pi/8$ c- $\pi/2$ d- $\frac{2\pi}{3}$

9) If $\sin 2x = \sqrt{3}/2$ then x is ____
a- $\frac{\pi}{3}, \frac{5\pi}{3}$ b✓ $\frac{\pi}{6}, \frac{\pi}{3}$ c- $\pi/3, \frac{2\pi}{3}$ d- $-\pi/4, \frac{5\pi}{4}$

10) Solution of $\sin x = 0$ is ____.
a- θ b- π ✓c- $0, \pi$ d- None

11) Solution Set of $\sin^2 x + \cos^2 x = 0$ is ____.
a- R b✓ ϕ c- $\{0, \pi\}$ d- $\{0, \pi/2\}$

12) $\tan x = \frac{1}{\sqrt{3}}$ then solution set is ____ for $n \in Z$
a✓ $\{\frac{\pi}{6} + n\pi\}$ b- $\{\frac{\pi}{4} + n\pi\}$ c- $\{\frac{\pi}{3} + n\pi\}$ d- $\{\frac{\pi}{6} + 2n\pi\}$

13) Solution of $\sin x = \frac{1}{\sqrt{2}}$ lies in ____ Quadrents:
a✓ I, II b- I, III c- I, IV d- II, IV

14) Solution of $1 + \cos x = 0$ is ____ in $x \in [0, 2\pi]$
a- $x = 0$ b- $x = \pi/2$ c- $x = 3\pi/2$ ✓d- $x = \pi$

15) $\{\frac{\pi}{4} + 2n\pi\} \cup \{\frac{3\pi}{4} + 2n\pi\}$ is the S.S of ____.
a- $\sin x = 1/2$ b✓ $\sin x = \frac{1}{\sqrt{2}}$ c- $\sin x = \sqrt{3}/2$ d- $\sin x = 0$